

John Ellis Chandler III

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EDUCATION

Olin College of Engineering

Bachelor of Science, Electrical and Computer Engineering. GPA: 3.63

NSBE Boston Professional Scholar, Dr. Calvin Martin Memorial Scholarship, EDGE Consortium Scholar

Needham, MA

May 2028

SKILLS

Tools: Ansys HFSS, ICP-RIE, AFM, XPS, ALD, CVD, SEM, LTSpice, Simulink, KiCad, MATLAB

Languages/Frameworks: Verilog, Python, Java, TypeScript, Bash, React, Django, Git

Relevant Coursework: Quantum Mechanics, Microelectronic Circuits, Solid-State Physics, Systems & Signals, Electromagnetism

PROFESSIONAL EXPERIENCE

IonQ

Jun. 2026 – Present

Research and Development Intern

Cambridge, MA

- Developed an O₂/Ar plasma Atomic Layer Etching (ALE) Recipe for Diamond Surface Smoothing, achieving 66 pm RMS roughness over a 500 × 500 nm² scan area and a 0.8 Å/cycle etch rate, confirmed via Atomic Force Microscopy (AFM).
- Optimized SiV Diamond pre-processing using XPS, SEM, & AFM, replacing Triacid cleaning in favor of an O₂ Plasma process.

SpinQuorum

Jan. 2026 – Jun. 2026

Research Assistant

Needham, MA

- Co-authored 2 accepted IEEE QSEE papers on low-cost NV-center ODMR and portable NMR educational platforms.
- Designed and optimized 2.87 GHz microwave patch antennas for NV-center excitation, performing full-wave EM simulations in Ansys HFSS to evaluate B-field intensity, return loss, and impedance matching.
- Built an ODMR platform for ~\$167, over 99% cheaper than commercial systems, demonstrating NV fluorescence and magnetic field measurements.

Green Bank Observatory

May 2025 – Aug. 2025

Summer Student Researcher

Green Bank, WV

- Selected as one of seven undergraduates from 450+ applicants to research with the National Radio Astronomy Observatory.
- Implemented a hardware-efficient Spectral Kurtosis algorithm on an AMD Xilinx Virtex-6 FPGA to detect and mask RFI in real time for the Green Bank Telescope, designed in Simulink and Verilog.
- Authored and published a research paper on FPGA-based Spectral Kurtosis, submitted to AAS 2025.

Olin Plasma Engineering Lab

Sep. 2024 – Present

Research Team Member

Needham, MA

- Designed and built a low-cost power processing unit for a Hall Effect Thruster intended for deployment in a 3U CubeSat.
- Wrote a research paper on magnetic shielding for Hall Thrusters and developed G-Code scripts for custom shield designs.
- Simulated power-electronics topologies in KiCad, LTSpice, and PLECS to step up power from solar panels.

PROJECTS

ATLAS Telescope

Sep. 2025 – Dec. 2025

Software Lead

- Led a 5-engineer team building an autonomous telescope mount for one-click celestial target acquisition and tracking.
- Built a Raspberry Pi plate-solving pipeline in Python, cutting localization time from 10 to 2 minutes via astrometric matching optimization.
- Designed coordinate transformation and motion-control algorithms converting celestial coordinates into RA/Declination motor commands with Earth rotation compensation.
- Integrated 100+ cameras with NEMA 32 stepper motors for automated long-exposure astrophotography with sidereal tracking.

Multi-Cycle RISC-V Processor

Dec. 2025 – Jan. 2026

RTL Design Engineer

- Designed a 32-bit RISC-V processor supporting RV32I with memory-mapped PWM and timer peripherals for FPGA execution.
- Verified datapath, control unit, and immediate-generation logic using SystemVerilog testbenches and Icarus simulations.

ACTIVITIES & LEADERSHIP

National Society of Black Engineers/Physicists

Aug. 2024 - Present

President

- Founded and lead Olin's NSBE and NSBP chapter; named one of 28 NSBE Boston Professional Scholars and served as student speaker at the 2025 Inspire STEM Gala.
- Elected to the NSBP Student Council and serve as co-administrator for the NSBP Innovate Seminar Series.